

REMARKS

In the final Office Action, the Examiner objected to the specification for a minor informality; objected to claim 85 for a minor informality; rejected claims 56-60, 62-66, 74-78, 80-84, and 92 under 35 U.S.C. § 102(e) as anticipated by Nazarathy et al. (U.S. Patent No. 6,490,727); rejected claims 67-73 and 85-91 under 35 U.S.C. § 103(a) as unpatentable over Nazarathy et al. in view of Naegeli et al. (U.S. Patent No. 6,574,797); and rejected claims 61 and 79 under 35 U.S.C. § 103(a) as unpatentable over Nazarathy et al. in view of Brock et al. (U.S. Patent No. 6,839,413).

By this Amendment, Applicants propose amending the specification and claim 85 to improve form. Applicants respectfully traverse the Examiner's rejections under 35 U.S.C. § 102 and 103. Claims 56-92 remain pending.

OBJECTION TO THE SPECIFICATION

At paragraph 2 of the final Office Action, the Examiner objected to the specification, requesting the serial number for an identified related application. Applicants propose amending the specification to include the requested serial number.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the objection to the specification.

OBJECTION TO THE CLAIMS

In paragraph 3 of the final Office Action, the Examiner objected to claim 85 because "CMTS" should allegedly be "the CMTS." Applicants propose amending claim 85 in the manner suggested by the Examiner.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the objection to claim 85.

REJECTION UNDER 35 U.S.C. § 102 BASED ON NAZARATHY ET AL.

In paragraph 5 of the final Office Action, the Examiner rejected claims 56-60, 62-66, 74-78, 80-84, and 92 under 35 U.S.C. § 102(e) as allegedly anticipated by Nazarathy et al. Applicants respectfully traverse the rejection.

A proper rejection under 35 U.S.C. § 102 requires that a single reference teach every aspect of the claimed invention either expressly or impliedly. Any feature not directly taught must be inherently present. In other words, the identical invention must be shown in as complete detail as contained in the claim. See M.P.E.P. § 2131. Nazarathy et al. does not disclose or suggest the combination of features recited in claims 56-60, 62-66, 74-78, 80-84, and 92.

Independent claim 56, for example, is directed to a fiber node in a hybrid fiber-coax network located between an upstream facility and a plurality of cable modems. The fiber node comprises a cable modem termination system (CMTS) comprising a transmitter to transmit data to the cable modems as downstream analog radio frequency (RF) signals over a plurality of downstream channels, a receiver to receive upstream analog RF signals from the cable modems over a plurality of upstream channels and extract data from the upstream analog RF signals, and a processor, connected to the transmitter and the receiver, to provide the data to the transmitter, receive the extracted data from the receiver and send the extracted data to the upstream facility, and

dynamically allocate a downstream channel or an upstream channel during operation of the fiber node.

Nazarathy et al. does not disclose or suggest the combination of features recited in claim 56. For example, Nazarathy et al. does not disclose or suggest a CMTS that includes a processor to, among other things, dynamically allocate a downstream channel or an upstream channel during operation of the fiber node.

The Examiner alleged that Nazarathy et al. discloses a CMTS of a fiber node that includes a processor to dynamically allocate a downstream channel or an upstream channel during operation of the fiber node and cited column 5, lines 14-16, and column 35, lines 36-51, of Nazarathy et al. for support (final Office Action, paragraphs 1 and 5). Applicants respectfully disagree.

At column 5, lines 6-16, Nazarathy et al. discloses:

The upstream channel is modeled as a stream of mini-slots along the time axis, the time reference for which is generated by the CMTS and communicated to all CMs. The CMTS arbitrates access to these slots by each of the cable modems. For example it may grant some number of contiguous slots to a CM for it to transmit some data or it may assign a number of slots for contention among stations that wish to transmit some data without having made prior reservations or it may allocate mini-slots to stations that communicated to the CMTS their wish to be allocated reserved bandwidth.

In this section, Nazarathy et al. discloses that a CMTS may grant or assign some number of slots of an existing upstream channel. Applicants submit that assigning slots of an existing upstream channel is completely different from dynamically allocating a downstream channel or an upstream channel. As explained in Applicants' specification in paragraph 0020, dynamic channel allocation eliminates time-consuming and costly manual provisioning and reprovisioning. Thus, nowhere in this section, or elsewhere,

does Nazarathy et al. disclose or suggest a CMTS of a fiber node that includes a processor to dynamically allocate a downstream channel or an upstream channel during operation of the fiber node, as required by claim 56.

At column 35, lines 36-51, Nazarathy et al. discloses:

For example, instead of using an interactive agent, a small ITS (CMTS or INA) could be placed in the deep fiber node and then there would be need for two-way digital traffic between the deep fiber nodes and the TDMH. This is to be compared with the interactive agent architecture described above, wherein only digital upstream traffic is needed, as all downstream communication is over QAM channels operating over the RF cable downstream frequencies.

In cases where two way digital transmission is needed, the function of the TDMH is to multiplex the upstream digital signals as described above (though the sources of upstream digital signals are now "mini" CMTS rather than AG units), as well as to demultiplex the downstream digital signal arriving from the head-end at the TDMH, and cross-connect a specific digital signal to each of the deep fiber nodes connected to the TDMH.

In this section, Nazarathy et al. discloses that a small interactive termination system (ITS) can be placed in a deep fiber node so that digital traffic is communicated between the deep fiber node and the time division multiplexing hub (TDMH). Nowhere in this section, or elsewhere, does Nazarathy et al. disclose or suggest a CMTS of a fiber node that includes a processor to dynamically allocate a downstream channel or an upstream channel during operation of the fiber node, as required by claim 56.

For at least these reasons, Applicants submit that claim 56 is not anticipated by Nazarathy et al. Claims 57-60 and 62-66 depend from claim 56 and are, therefore, not anticipated by Nazarathy et al. for at least the reasons given with regard to claim 56.

Independent claim 74 recites features similar to, but possibly different in scope from, features recited in claim 56. Claim 74 is, therefore, not anticipated by Nazarathy et

al. for at least reasons similar to reasons given with regard to claim 56. Claims 75-78 and 80-84 depend from claim 74 and are, therefore, not anticipated by Nazarathy et al. for at least the reasons given with regard to claim 74.

Independent claim 92 is directed to a hybrid fiber-coax network. The network comprises a cable system head end and a plurality of fiber nodes connected between a plurality of cable modems and the cable system head end. Each of the fiber nodes comprises a transmitter to transmit data to the cable modems over a plurality of downstream channels, a receiver to receive upstream signals from the cable modems over a plurality of upstream channels and extract data from the upstream signals, and a processor, connected to the transmitter and the receiver, to provide the data to the transmitter, receive the extracted data from the receiver and send the extracted data to the cable system head end, and dynamically assign or configure a downstream channel or an upstream channel during operation of the fiber node.

Nazarathy et al. does not disclose or suggest the combination of features recited in claim 92. For example, Nazarathy et al. does not disclose or suggest a CMTS that includes a processor to, among other things, dynamically assign or configure a downstream channel or an upstream channel during operation of the fiber node for at least reasons similar to reasons given with regard to claim 56.

For at least these reasons, Applicants submit that claim 92 is not anticipated by Nazarathy et al.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 56-60, 62-66, 74-78, 80-84, and 92 based on Nazarathy et al.

*REJECTION UNDER 35 U.S.C. § 103 BASED ON
NAZARATHY ET AL. AND NAEGELI ET AL.*

In paragraph 8 of the final Office Action, the Examiner rejected claims 67-73 and 85-91 under 35 U.S.C. § 103(a) as allegedly unpatentable over Nazarathy et al. in view of Naegeli et al. Applicants respectfully traverse the rejection.

Claims 67-73 depend from claim 56, and claims 85-91 depend from claim 74. Without acquiescing in the Examiner's rejections with regard to claims 67-73 and 85-91, Applicants submit that the disclosure of Naegeli et al. does not cure the deficiencies in the disclosure of Nazarathy et al. identified above with regard to claims 56 and 74. Therefore, claims 67-73 and 85-91 are patentable over Nazarathy et al. and Naegeli et al., whether taken alone or in any reasonable combination, for at least the reasons given with regard to claims 56 and 74.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 67-73 and 85-91 based on Nazarathy et al. and Naegeli et al.

*REJECTION UNDER 35 U.S.C. § 103 BASED ON
NAZARATHY ET AL. AND BROCK ET AL.*

In paragraph 9 of the final Office Action, the Examiner rejected claims 61 and 79 under 35 U.S.C. § 103(a) as allegedly unpatentable over Nazarathy et al. in view of Brock et al. Applicants respectfully traverse the rejection.

Claim 61 depends from claim 56, and claim 79 depends from claim 74. Without acquiescing in the Examiner's rejections with regard to claims 61 and 79, Applicants submit that the disclosure of Brock et al. does not cure the deficiencies in the disclosure of Nazarathy et al. identified above with regard to claims 56 and 74. Therefore, claims

61 and 79 are patentable over Nazarathy et al. and Brock et al., whether taken alone or in any reasonable combination, for at least the reasons given with regard to claims 56 and 74.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 61 and 79 based on Nazarathy et al. and Brock et al.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully request the Examiner's reconsideration of this application, and the timely allowance of the pending claims.

Applicants respectfully request that this Amendment under 37 C.F.R. § 1.116 be entered by the Examiner, placing claims 56-92 in condition for allowance. Applicants submit that the proposed amendments do not raise new issues or necessitate the undertaking of any additional search of the art by the Examiner, since all of the elements and their relationships claimed were either earlier claimed or implied in the claims as examined. Therefore, this Amendment should allow for immediate action by the Examiner. Further, Applicants submit that the entry of this Amendment would place the application in better form for appeal, should the Examiner dispute the patentability of the pending claims.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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